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Perioperative Management of patient with Aspiration Pneumonia/ Pulmonary Embolism

Aspiration:

Definition:

Aspiration is the inhalation of material into the airway below the vocal cords.

Clinical importance:-

*May be asymptomatic

*May cause aspiration pneumonitis, ARDS, or respiratory failure.

*Risk increases in unconscious, sedated, or anesthetized patients due to decreased LES ton and decreased laryngeal reflexes.

Aspiration: Risk Factors Under General Anesthesia:

1. Full stomach / delayed gastric emptying: trauma, opioids, diabetes, renal failure, non-fasted patient
2. Increased intragastric pressure: intestinal obstruction, pregnancy, laparoscopic surgery, obesity
3. Anesthesia-related: gastric insufflation, LMA use, light anesthesia, difficult intubation
4. LES incompetence: GERD, hiatus hernia, pregnancy
5. Acute alcohol intoxication
6. Operative factors: emergency surgery, laparoscopy, Trendelenburg position

Measures to Reduce Aspiration Risk:

1. Fasting.
2. Gastric emptying (NG tube when indicated).
3. Increase LES tone: Metoclopramide.
4. Rapid Sequence Induction (RSI).
5. Induction in lateral or sitting position.
6. Reduce severity of pneumonitis: H2 blockers, antacids.

Aspiration: Diagnosis & Immediate Management:

Diagnosis:-

Auscultation: wheeze, crepitations - Chest X-ray: infiltrates, typically in right lower lobe.

If aspiration occurs:

1. Place patient in head-down lateral position.
2. Suction the pharynx and larynx + give O2.
3. Intubate if needed for airway protection and suctioning
4. Bronchoscopy if SpO2 < 90% despite 100% O2 or if solid particles present
5. Supportive treatment: O2, bronchodilators, physiotherapy, CPAP/PEEP in severe cases.

Pulmonary Embolism:

Definition:

Pulmonary embolism is obstruction of the pulmonary arteries by:-

*Thrombus (most common).

*Fat embolism.

*Air embolism.

*Tumor cells.

*Amniotic fluid embolism.

Risk factors (DVT):

Prolonged bed rest, postpartum state, lower limb fractures, cancer, obesity, heart failure, surgery

Pulmonary Embolism:

Clinical Features & Diagnosis:

Clinical features:-

* Sudden dyspnea.

*Tachypnea. -

* Chest pain. -

*Hemoptysis. -

*Wheezi -

Investigations:-

*ABG: mild hypoxemia + respiratory alkalosis.

*CXR: normal or wedge-shaped infarct.

*ECG: tachycardia, right axis deviation.

*CT: pulmonary angiography.

* Echocardiography.

Management of Pulmonary Embolism

Treatment:-

*O2 and hemodynamic support.

*Warfarin for 3–12 months (after overlap).

*Thrombolysis for massive PE with hypotension.

* IVC filter if anticoagulation contraindicated.

*Pulmonary embolectomy for unstable patients.

Prevention:-

Early ambulation.

Heparin prophylaxis.

Reference;

1) Miller's Anesthesia

Standard reference for aspiration & pulmonary complications.
https://www.elsevier.com/books/millers-anesthesia

2) Morgan & Mikhail's Clinical Anesthesiology

Main source for aspiration risk, RSI, and pulmonary embolism.
https://www.mhmedical.com/titleDetails.aspx?titleID=3516

3) ASA Practice Guidelines

Fasting and airway protection guidelines.
https://www.asahq.org/standards-and-guidelines

4) CHEST Guidelines (VTE/PE)

Evidence-based PE management.
https://journal.chestnet.org